CLAIM LISTING

1. (currently amended) A method of transmitting ~~(2000)~~ a data packet on a communication path from a first communication node to a second communication node in a mobile network, the method ~~characterised by~~ comprising the steps of:

receiving a route message from said second communication node, wherein said route message includes a list of a plurality of intermediary addresses between said first communication node and said second communication node, the plurality of intermediary addresses comprising an address of a mobile router;

generating ~~(3014, 3038)~~ a preferred communication path in response to said list of intermediary addresses; and

transmitting ~~(2050)~~ said at least one data packet from said first communication node to said second communication node via said preferred communication path.

2. (original) The method of transmitting a data packet according to Claim 1, wherein said data communication network supports nested network mobility operation and said step of transmitting includes the step of:

routing said at least one data packet via a plurality of mobile routers identified by said intermediary addresses in said nested mobility network.

3. (currently amended) The method of transmitting a data packet according to Claim 1 ~~or Claim 2~~, wherein said data communication network operates in accordance with an IPv6 and/or IPv4 specification.

4. (currently amended) The method of transmitting a data packet according to ~~any preceding Claim~~ Claim 1, wherein said first communication node is a correspondent node of the said second communication node and/or said second communication node is a mobile network node.

5. (currently amended) The method of transmitting a data packet according to ~~any preceding Claim~~ Claim 1, the method further ~~characterised by~~ comprising the step of:

sending an advertising message, by a plurality of communication nodes in the mobile network, that includes route information related to communication nodes attached to said second communication node, so that a communication path to an intended recipient can be determined.

6. (currently amended) The method of transmitting a data packet according to ~~any preceding Claim~~ Claim 1, wherein said list of the plurality of intermediary addresses includes addresses of one or more mobile routers above the second communication node in a route hierarchy for delivering said data packet to an intended recipient.

7. (currently amended) The method of transmitting a data packet according to Claim 5 ~~or Claim 6~~, the method further ~~characterised by~~ comprising the step of:

requesting transmission of one or more advertisement messages, containing route information of one or more IP addresses, from adjacent communication nodes when said second communication node moves to a new location within the mobile network.

8. (currently amended) The method of transmitting a data packet according to ~~any of preceding Claims 5 or 7~~ Claim 5, the method further ~~characterised by~~ comprising the steps of:

extracting intermediary route messages from said route information in said advertising message at a communication node; and

transmitting said intermediary route messages to communication nodes that the extracting communication node serves.

9. (currently amended) The method of transmitting a data packet according to Claim 8, the method further ~~characterised by~~ comprising the step of:

appending a route message of the communication unit to said list of intermediary routes in said advertising message at said communication node.

10. (currently amended) The method of transmitting a data packet according to ~~any of preceding Claims 5 or 7 to 9~~ Claim 5 further ~~characterised by~~ comprising the step of:

sending periodically said route advertising message to all or a selected number of communication nodes in the mobile network.

11. (currently amended) The method of transmitting a data packet according to ~~any of preceding Claims 5 or 7 to 10~~ Claim 5, the method further ~~characterised by~~ comprising the step of:

sending a mobile network prefix advertisement message by a mobile router at a top of a routing hierarchy in the mobile network to advertise said mobile network prefix; and

determining by communication nodes in the same mobile network that they are located within the sending mobile router's mobile network.

12. (currently amended) The method of transmitting a data packet according to ~~any of preceding Claims~~ Claim 1, the method further ~~characterised by~~ comprising the step of:

sending an extended binding update message containing route information only to communication nodes outside of the sending communication node's mobile network.

13. (currently amended) A communication message ~~(2600, 2700)~~ having route information that includes an ordered list of a plurality of intermediary addresses comprising at least one address of a mobile router between a first communication node and a second communication node, for use in the method of ~~any of preceding Claims 1 to 12~~ Claim 5.

14-16. (canceled)

17. (currently amended) A communication node comprising:

an interface for communicating with other communication nodes, for example in a mobile network;

the communication node ~~characterised by~~ comprising:

a memory element storing an extended binding cache containing routes and/or source route information relating to a plurality of communication nodes, for example nodes in the mobile network;

a processor, operably coupled to said memory element, for generating a route, based on information stored in the extended binding cache; and

a transmitter, operably coupled to said processor, for delivering a data packet to an intended recipient via said route.

18. (currently amended) A communication node comprising:

an interface for communicating with other communication nodes, for example in a mobile network;

the communication node ~~characterised by~~ comprising:

a receiver operably coupled to said interface, receiving an extended binding update message containing route information relating to a communication node in the mobile network; and

a processor, operably coupled to said receiver, for generating a care of source route message, based on information contained in the extended binding update message, the care of source route message comprising an intermediary address of a mobile router.

19-26. (canceled)